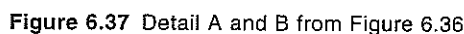
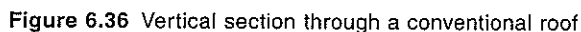
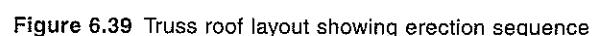
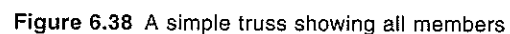


Trussed roofing—Roof trusses are fabricated off-site, then transported to the site and lifted into position. This enables fast construction, the use of



Environmental controls

Surface and subsoil drainage of new or existing buildings is a very important aspect of building



construction. Some of the problems caused by poor site drainage are as follows:

Boggy ground—This causes problems for vehicular and pedestrian access around the site, especially for trucks delivering materials. Workers will also create a hazard by walking in mud and then dragging it through the building, creating slippery conditions.

Erosion—Soil erosion may be caused by water not being drained away adequately, which may lead to the footings being undermined and surface soil being washed into gutters and stormwater pipes and, finally, into our river systems.

Electrical hazard—Where electrical equipment and portable powered tools are being used, leads may contact wet surfaces, either outside or inside (where water is trapped on concrete slabs during construction).

Material damage—This may occur where materials are stored either outside or on concrete slabs. If water is not drained away, materials may be damaged either by direct wetting or by moist air.

Insect and fungal damage—If excess water is not drained away from buildings and is allowed to soak in, especially around floor areas, a suitable environment for cockroaches, subterranean termites and various types of fungi will be created.

Removal of surface water

Surface water may collect due to run-off from nearby land, washing down areas on-site, or from rainfall. It may be removed by several methods:

Sweeping/mopping—Concrete slabs in the open tend to hold a certain amount of surface water. This may be removed by simply using a yard broom or squeegee to push or drag it to the edge. Where frames are already in place, small holes or notches may be made to allow the water to escape through the bottom plate. If this is not possible, a mop and bucket can be used to soak up the water and cart it away.

Filling and grading—To prevent water ponding on the surface, all holes and depressions can be filled with crushed sandstone, road base or crushed brick and rock. They should be well

compacted to allow the water to drain away rather than soak in. All areas around the building should have a suitable grade away from external walls so that water will not lie close to the work area (see Figure 6.43).

Surface improvement—Where soils don't allow water to run off or drain through, they may become very boggy. This usually occurs with clay soils; therefore a surface improvement such as laying road base or crushed sandstone will improve conditions underfoot for the duration of the job. This is particularly important in driveway access areas, to prevent vehicles from becoming bogged and churning up the surface.

Surface drains/gutters—Where it is difficult to grade the surface away from the building, an alternative would be to create surface dish drains or gutters to divert the water to a collection point or sump. These drains or gutters should be only very shallow, as deep drains will create a safety hazard. (See Figures 6.40 and 6.41.)

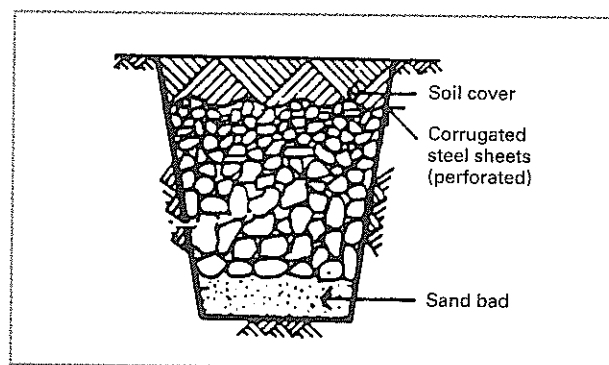


Figure 6.40 Rubble drain

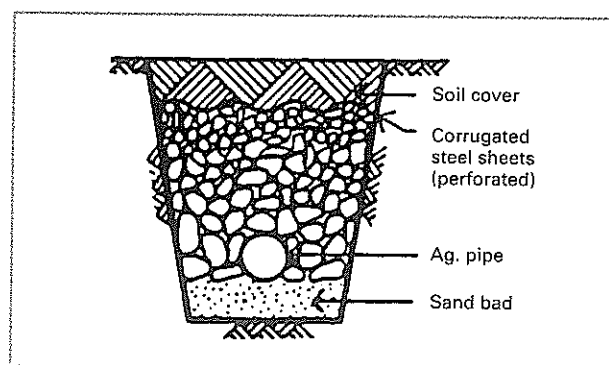


Figure 6.41 Porous pipe encased in stone rubble

Sub-soil drains—These can be either temporary or permanent, and are used where surface grading is difficult or as a water collection and diversion line for surface grading. Where the water can't be directed to a stormwater line after collection in an agricultural line, it may be directed to an absorption trench or transpiration bed placed well away from the building. This allows the water to soak away through the subsoil via graded stone, broken bricks, tiles, concrete or gravels laid in the trench.

There are several types of agricultural pipes available, some of which are shown in Figure 6.42.

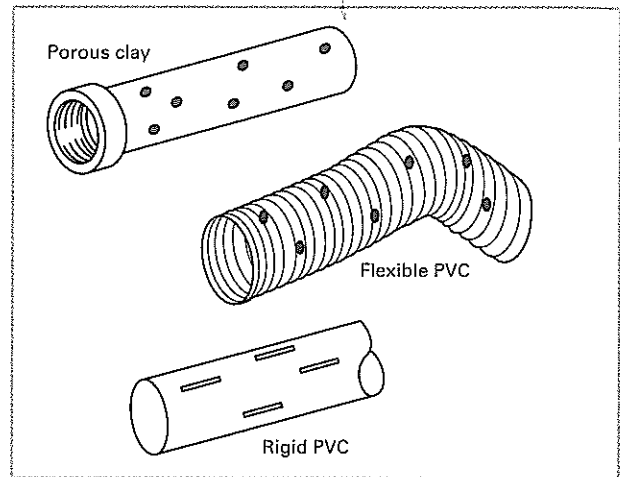


Figure 6.42 Typical available agricultural pipes

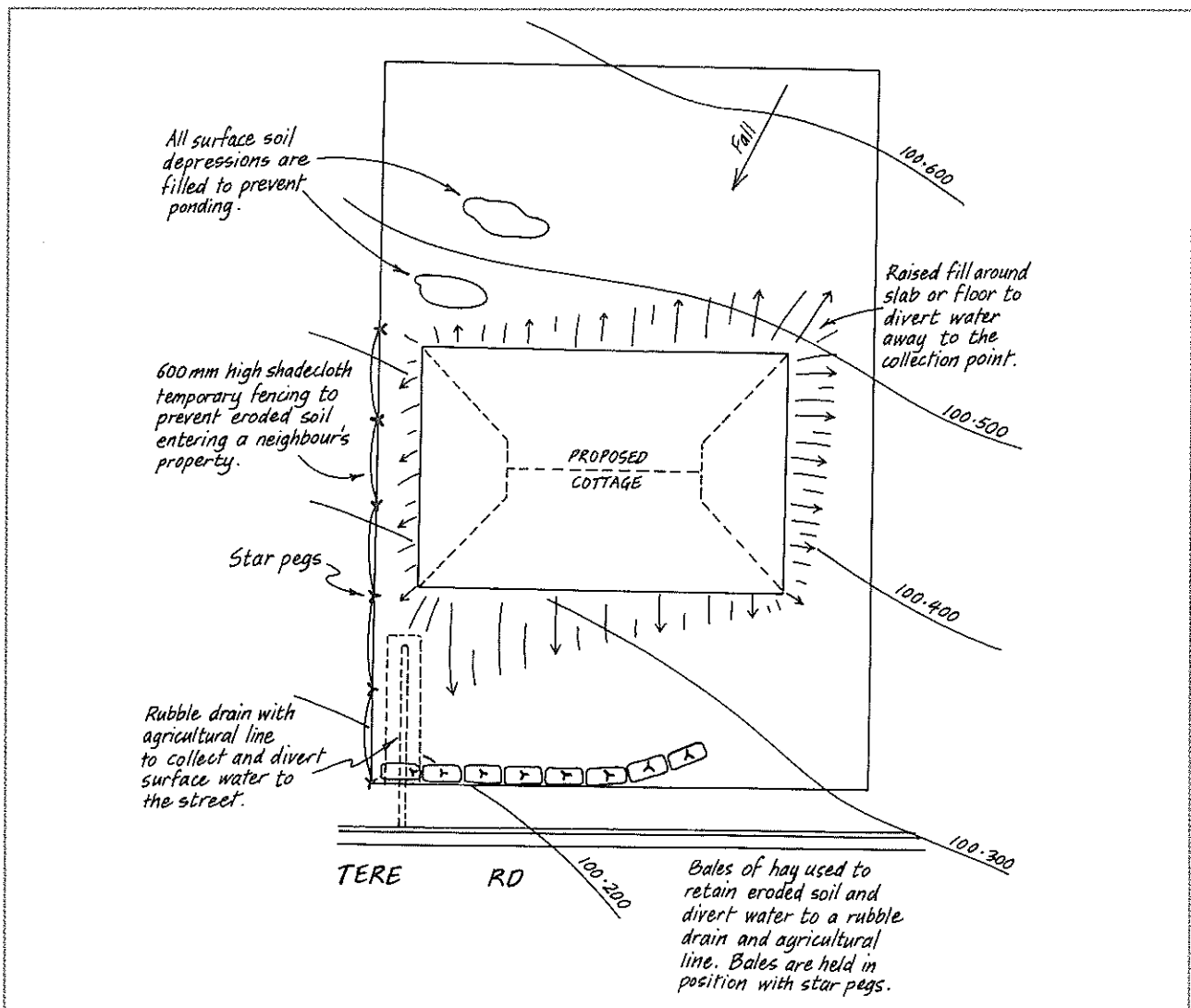


Figure 6.43 Building site describing surface water drainage and soil retention